

What is claimed is:

- 1 1. An igniter composition comprising:

2 a fuel component containing at least about 3 composition weight percent

3 and less than 15 composition weight percent of boron, and

4 an oxidizer component containing at least one oxidizer material selected

5 from the group consisting of alkali metal nitrates, alkaline earth metal nitrates and

6 mixtures thereof,

7 wherein the fuel component and the oxidizer component are present in

8 stoichiometrically balanced amounts.

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10 2. The igniter composition of claim 1 wherein:

11 the fuel component additionally contains at least one fuel material that

12 produces gas on reaction with the at least one oxidizer material.

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14 3. The igniter composition of claim 2 wherein the at least one fuel

15 material that produces gas on reaction with the at least one oxidizer material comprises

16 guanidine nitrate.

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18 4. The igniter composition of claim 3 comprising less than about 60

19 composition weight percent guanidine nitrate.

1 5. The igniter composition of claim 4 comprising:
2 at least about 20 composition weight percent guanidine nitrate and no
3 more than about 40 composition weight percent guanidine nitrate.

1 6. The igniter composition of claim 1 wherein the at least one
2 oxidizer material is potassium nitrate.

1 7. The igniter composition of claim 6 wherein potassium nitrate is
2 present in a concentration of at least about 40 composition weight percent and no more
3 than about 85 composition weight percent.

1 8. The igniter composition of claim 7 wherein the fuel component
2 additionally contains at least about 8 composition weight percent guanidine nitrate and
3 less than about 60 composition weight percent guanidine nitrate.

1 9. The igniter composition of claim 8 wherein:
2 the oxidizer component contains at least about 55 composition weight
3 percent and no more than about 75 composition weight percent of potassium nitrate
4 and
5 the fuel component contains,

6 at least about 7 composition weight percent and less than about 10
7 composition weight percent of boron; and

8 at least about 20 composition weight percent and no more than about
9 30 composition weight percent of guanidine nitrate.

1 10. The igniter composition of claim 1 containing less than about 10
2 composition weight percent of boron.

2 11. An occupant restraint system device comprising a housing
3 containing a supply of reactant material, the reactant material including a fuel
4 component containing at least about 3 composition weight percent and less than 15
5 composition weight percent of boron, and an oxidizer component containing at least
6 one oxidizer material selected from the group consisting of alkali metal nitrates,
7 alkaline earth metal nitrates and mixtures thereof, wherein the fuel component and the
oxidizer component are present in stoichiometrically balanced amounts.

1 12. The occupant restraint system device of claim 11 wherein the
2 housing additionally contains a supply of gas generant material and wherein upon
3 activation of the device the reactant material reacts to produce ignition reaction
4 products which contact at least a portion of the supply of gas generant material to
5 initiate generation of gas thereby.

1 13. The occupant restraint system device of claim 12 wherein the
2 supply of reactant material comprises at least about 20% on a weight basis of the
3 supply of reactant material and the supply of gas generant material combined.

1 14. A seat belt pretensioner comprising the occupant restraint system
2 device of claim 12.

1 15. A micro-gas generator comprising the occupant restraint system
2 device of claim 12.

1 16. The occupant restraint system device of claim 11 wherein the
2 reactant material fuel component contains less than about 10 composition weight
3 percent of boron.

1 17. The occupant restraint system device of claim 11 wherein the
2 reactant material fuel component additionally contains at least one fuel material that
3 produces gas on reaction with the at least one oxidizer material.

1 18. The occupant restraint system device of claim 17 wherein the at
2 least one fuel material that produces gas on reaction with the at least one oxidizer
3 material comprises guanidine nitrate.

1 19. The occupant restraint system device of claim 18 wherein the
2 reactant material comprises less than about 60 composition weight percent guanidine
3 nitrate.

2 20. The occupant restraint system device of claim 19 wherein the
3 reactant material comprises:

4 at least about 20 composition weight percent guanidine nitrate and no
5 more than about 40 composition weight percent guanidine nitrate.

1 21. The occupant restraint system device of claim 11 wherein the at
2 least one oxidizer material is potassium nitrate.

1 22. The occupant restraint system device of claim 21 wherein
2 potassium nitrate is present in the reactant material in a concentration of at least about
3 40 composition weight percent and no more than about 85 composition weight
4 percent.

1 23. The occupant restraint system device of claim 22 wherein the fuel
2 component additionally contains at least about 8 composition weight percent
3 guanidine nitrate and less than about 60 composition weight percent guanidine nitrate.

1 24. The occupant restraint system device of claim 23 wherein:
2 the reactant material oxidizer component contains at least about 55
3 composition weight percent and no more than about 75 composition weight percent
4 of potassium nitrate and
5 the reactant material fuel component contains,
6 at least about 7 composition weight percent and less than about 10
7 composition weight percent of boron; and
8 at least about 20 composition weight percent and no more than about 30
9 composition weight percent of guanidine nitrate.

1 25. A method of generating gas suitable for use in an occupant
2 restraint system of a motor vehicle, said method comprising:
3 igniting a supply of an igniter composition containing a fuel component
4 containing at least about 3 composition weight percent and less than 15 composition
5 weight percent of boron, and an oxidizer component containing at least one oxidizer
6 material selected from the group consisting of alkali metal nitrates, alkaline earth
7 metal nitrates and mixtures thereof, wherein the fuel component and the oxidizer

8 component are present in stoichiometrically balanced amounts, to form igniter
9 composition reaction products and

10 contacting a supply of a gas generant composition with the igniter
11 composition reaction products to form product gas.

1 26. The method of claim 25 wherein the igniter composition is
2 present in a relative amount of at least about 20% of the supply of the igniter
composition and the supply of the reactant material, on a weight basis.

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